

59th Interdepartmental Hurricane Conference

The Nation's Tropical Cyclone Program: Priorities for the Next Decade

AGENDA

Monday, March 7, 2005

9:00 AM Early Registration (9:00-1:00)

Opening Session

12:45 PM Welcome/Introduction Mr. Samuel P. Williamson, Federal Coordinator

12:50 PM Welcoming Remarks The Honorable John Peyton
Mayor of Jacksonville

1:00 PM Opening Remarks/Introduction Mr. Samuel P. Williamson, Federal Coordinator

1:10 PM Keynote Address: **Dr. James R. Mahoney**
**Assistant Secretary of Commerce for Oceans and Atmosphere/
NOAA Deputy Administrator**

1:40 PM Panel: *The Power of Partnerships*

Moderator: RADM Richard R. Behn, Director, Marine and Aviation (NOAA)

Panelists: Brig Gen Thomas E. Stickford, Air Force Director of Weather

Mr. Kim Curry, Deputy Technical Director for Oceanographer of the Navy

Mr. Bill Proenza, Director, NOAA/National Weather Service Southern

Region

Dr. Peter B. Ortner, Chief Scientist, NOAA/Atlantic Oceanographic and
Meteorological Laboratory

Dr. Richard Fisher, Deputy Director of the Earth-Sun System Division, NASA

3:10 PM Introduction of Federal Agency Lead Representatives

3:20 PM Afternoon coffee/soda break (3:20-3:45)

Session 1: 2004 Hurricane/Typhoon Season in Review

Session Leaders: Mr. Max Mayfield, TPC/NHC

Lt Col Amanda Preble, JTWC

3:45 PM 2004 Atlantic Season Summary Dr. Jack Beven (TPC/NHC)

4:10 PM 2004 Eastern North Pacific Season Summary Dr. Lixion Avila (TPC/NHC)
 4:20 PM NHC Forecast Verification for 2004 Mr. James Franklin (TPC/NHC)
 4:35 PM Review of the 2004 Central Pacific Hurricane Season Mr. James Weyman (CPHC)
 4:45 PM A Review of JTWC's 2004 Tropical Cyclone Season Lt Col Amanda Preble (JTWC)
 5:00 PM 53 WRS 2004 Hurricane Season Reconnaissance Summary
 Lt Col Valerie Hendry (53 WRS)
 5:15 PM NOAA/AOC 2004 Reconnaissance Summary Dr. James McFadden (NOAA/AOC)
 5:45 PM Reception/Icebreaker (5:45-7:00)

Tuesday, March 8, 2005

7:00 AM Continental breakfast

7:50 AM Opening/Administrative remarks Mr. Robert Dumont (OFCM)
 Session Coordinator

Session 2: Modeling the Tropical Cyclone and its Environment

Session Leaders: Dr. Mark DeMaria (NESDIS)/Dr. Shuyi Chen (RSMAS/UM)

Rapporteurs: Ms. Mary Cairns (OFCM)/Dr. Paul Try (OFCM/STC)

8:00 AM Tropical Cyclone Forecasting Support at Fleet Numerical Meteorology and
 Oceanography Center Dr. Jeffrey Lerner (FNMOC)
 8:15 AM Advanced Hurricane Prediction at NCEP's Environmental Modeling Center: The
 HWRF Dr. Naomi Surgi (NCEP)
 8:30 AM Upgrades to the Operational GFDL Hurricane Prediction System: Plans for 2005: A
 JHT Project Update Mr. Morris Bender (GFDL),
 et.al.
 8:45 AM Hurricane Model Transitions to Operations at NCEP/EMC: A JHT Project Update
 Mr. Robert Tuleya (NCEP/EMC/SAIC), et.al.
 9:00 AM Improving Air-Sea Flux Parameterization in the GFDL/URI Coupled Hurricane-
 Wave-Ocean Model for Transition to Operations: A JHT Project Update
 Dr. Isaac Ginis (URI), et.al.
 9:15 AM Operational Hurricane Wave Forecasting at NCEP
 Dr. Hendrik Tolman (NCEP/SAIC/GSO)
 9:30 AM Results from the Incorporation of Ocean Heat Content and GOES Data in the
 Operational Ships Model during the 2004 Hurricane Season
 Ms. Michelle Mainelli (TPC/NHC), et.al.

9:45 AM Morning Break (9:45-10:00)

10:00 AM Application of NASA's High Resolution Finite-Volume General Circulation Model
 (fvGCM) to Hurricane Prediction Dr. Robert Atlas (NASA)
 10:15 AM Scale Interactions and Tropical Cyclone Genesis: Why Global Models Have Skill

Dr. Greg Holland (NCAR/MMM) and Dr. Peter Webster (Georgia Tech)

10:30 AM Performance of the Florida State University Hurricane Superensemble during 2004
Mr. Brian Mackey (FSU), et.al.

10:45 AM Ensemble Forecasting in Hurricane Intensity
Dr. Kerry Emanuel (MIT)

11:00 AM Weather Research and Forecast (WRF) Model: Precipitation Prognostics from the
WRF Model during Recent Tropical Cyclones
Dr. Patrick Welsh (UNF) and Dr. Peter Bogenschutz (FSU)

11:15 AM Fully Explicit Real-Time WRF Forecasts for Frances, Ivan, and Jeanne (2004)
Dr. Christopher Davis (NCAR), et.al.

11:30 AM (Lunch on your own) (11:30-1:00)

Session Coordinator: Dr. Paul Try (OFCM/STC)

Session 3: Observing and Reconnaissance Technologies

Session Leaders: Mr. Chris Velden (UW-CIMSS)/Ms. Michelle Mainelli
(TPC/NHC)

Rapporteurs: Mr. Floyd Hauth (OFCM/STC)/Mr. Robert Dumont (OFCM)

1:00 PM Overview of the NASA Weather Focus Area Program
Dr. Ramesh Kakar (NASA)

1:15 PM Hurricane Rainbands and Intensity Experiment (RAINEX) 2005
Dr. Shuyi Chen (RSMAS/UM) and Dr. Robert Houze (Univ. of Washington)

1:30 PM Status, Performance, and Upcoming Needs Relating to the GPS Dropsonde for
Operations and Research
Mr. Michael Black (HRD) and Mr. Jeff Smith (NOAA/AOC)

1:45 PM Impact of SFMR Surface Wind Observations on Hurricane Landfall Forecasts and
Warnings
Dr. Peter Black (HRD) and Mr. James Franklin (TPC/NHC)

2:00 PM Preliminary Analysis of New Operational SFMR Performance During 2004
Mr. Eric Uhlhorn (UM-CIMAS), et.al.

2:15 PM An Airborne Sensor for Mapping the 3-D Atmospheric Boundary Layer Winds,
Ocean Surface Wind Vector Field and Precipitation within Tropical Cyclones
Dr. James Carswell (Remote Sensing Systems),
et.al.

2:30 PM Afternoon Break (2:30-3:00)

3:00 PM Applications for Smart Balloons in Storm Research
Dr. Steven Businger (Univ. of Hawaii) and Mr. R. Johnson (NOAA/ARLFRD)

3:15 PM Measurement of Tropical Cyclone Surface Winds at Landfall
Dr. Forrest Masters (FIU), et.al.

3:30 PM Autonomous Observations of the Upper Ocean during Hurricane Frances
Dr. Eric Terrill (Scripps Institution of Oceanography), et.al.

3:45 PM Application of TRMM Precipitation Radar Analyses to Understanding Tropical
Cyclone Structure and Intensity Change
Dr. Jeffrey Halverson (NASA)

4:00 PM Estimating Surface Wind Fields in Tropical Cyclones using Infrared Satellite Imagery

- 4:15 PM NOAA's Next-Generation Polar and Geostationary Satellites—Hurricane Applications
Dr. James Kossin (UM-CIMSS), et.al.
Dr. Ray Zehr (NESDIS/ORA), et.al.
- 4:30 PM **One-minute Poster Previews**
Coordinator: Col Mark Weadon (Air Force Deputy to NOAA)
- 5:00 PM **OFCM Staff Meeting (5:00-5:30)**
- 5:30 PM **Poster Session (5:30-7:30)** plus snacks and cash bar
- Digital Services: Providing Access to High Quality, High Temporal and Spatial Resolution Digital Weather Mr. Glenn Austin (NOAA/NWS)
 - Emergency Management Starts at Home Mr. Michael Crane (NOAA/NODC)
 - Coupled Boundary Layer Air-Sea Transfer (CBLAST) Observations in Hurricanes Frances, Ivan and Jeanne (2004) Dr. Peter Black (HRD)
 - Examples of Tropical Transition: Catarina (2004) and Alex (2004)
Dr. Lance Bosart (Univ. at Albany/SUNY), et.al.
 - Review of TAFB's 2004 Tropical Cyclone Related Activities, including the Impact of Microwave Fixes and the Verification of Tropical Cyclone Genesis Forecasts Mr. Daniel Brown and Mr. Hugh Cobb (TPC/TAFB)
 - Passive Microwave Imager Data in Statistical Forecasts of Tropical Cyclone Intensity
Dr. Daniel Cecil and Mr. Thomas Jones (Univ. of Alabama/Huntsville)
 - Long-Range Lightning Applications for Hurricane Intensity
Mr. Nicholas Demetriades and Mr. Ronald Holle (Vaisala Thunderstorm)
 - Ensemble-Based Data Assimilation of Hurricane Reconnaissance Observations
Dr. Brian Etherton (UNCC) and Dr. Sim Aberson (NOAA/HRD)
 - Statistical Post-Processing of the GFS Ensemble for Probabilistic Tropical Cyclone Track Forecasting Dr. Brian Etherton and Ms. Nicole Samra (UNCC)
 - New High-Resolution Near Real-Time Sea Surface Temperatures: The Multi-Sensor Improved SST (MISST) Project
Ms. Chelle Gentemann (Remote Sensing Systems), et.al.
 - The Stepped Frequency Microwave Radiometer: Theory, Operation, and Future Directions Mr. Alan Goldstein (NOAA/AOC), et.al.
 - Development of an Operational Stepped Frequency Microwave Radiometer for Remote Detection of Ocean Surface Wind Speed in Hurricanes
Dr. Mark Goodberlet and Dr. Ivan PopStefanija (Pro Sensing)
 - The Working Group for Natural Disaster Reduction and Post-Storm Data Acquisition – Leading the Way to Improved Hazard Forecasts and Mitigation
Dr. Andrew Garcia (USACE), et.al.
 - Evaluation of Data Assimilative Hindcasts for Initializing the Ocean in Hurricane Response Simulations and Coupled Hurricane Prediction Runs
Dr. George Halliwell (RSMAS/UM), et.al.

- Use of TRMM Data to Diagnose Differences in Tropical Cyclone Rainfall Intensity Dr. Jeffrey Halverson (NASA) and Dr. Haiyan Jiang (UMBC)
- Development of High Altitude UAV Weather Radars for Hurricane Research Dr. Gerald Heymsfield (NASA/GSFC) and Dr. Lihua Li (GEST/UM)
- Ocean Wind Vector Retrievals from WindSat Polarimetric Measurements in Extreme Events – 2004 Hurricane Season Dr. Zorana Jelenak (UCAR), et.al.
- Hurricane Wind Vector Measurements from WindSat Polarimetric Radiometer Dr. Linwood Jones (UCF), et.al.
- Development of STIPS for the Southern Hemisphere and Indian Ocean Dr. John Knaff (CSU/CIRA) and Mr. Charles Sampson (NRL Monterey)
- A Comparison between Targeted Observing Strategies for Tropical Cyclones Dr. Sharanya Majumdar (Univ. of Miami), et.al.
- The Atlantic Basin Hurricane Database Re-Analysis for the Decades of the 1910s, 1920s And 1930s Dr. Chris Landsea (HRD)
- Assessing the Skill of Tropical Cyclone Rainfall Forecasts Mr. Timothy Marchok (NOAA/GFDL), et.al.
- HURREVAC Inland Flood Planning and Response Tool: Helping Emergency Managers Respond to the Threat of Inland Floods Mr. Doug Marcy (NOAA/CSC), et.al.
- Experimental Hurricane Surge Modeling in Louisiana Using ADCIRC: Lessons Learned Dr. Hassan Mashriqui (LSU), et.al.
- Rapid Measurement of Flood Flows using Hydroacoustic and Radar Technology Mr. Robert Mason (USGS), et.al.
- U.S. Geological Survey Streamgaging for River Forecasting, Emergency Management, and Flood Control Mr. Robert Mason (USGS)
- Radar Applications at the NOAA/NWS/Tropical Prediction Center during the 2004 Hurricane Season – Finding the Maximum Wind Mr. Colin McAdie (TPC/NHC)
- High-Resolution Simulation of Hurricane Bonnie (1998) Part II: Examination of Air Trajectories and Eyewall Mixing Processes Dr. Michael Montgomery (CSU), et.al.
- Development of a Coupled Hurricane-Wave-Ocean System Dr. Il-Ju Moon (URI), et.al.
- Objective Estimation of Tropical Cyclone Wind Structure From Infrared Satellite Data Ms. Kimberly Mueller (CSU/CIRA), et.al.
- Florida Citrus Production Losses Due to Hurricanes Charley, Frances, and Jeanne Mr. Brad Rippey (USDA/OCE)
- Tropical Cyclone Rainfall Climatology – Utility in 2004 Hurricane Season QPF Mr. David Roth (NOAA/HPC)
- The Automated Tropical Cyclone Forecasting System (ATCF) - A Truly Interdepartmental Product Mr. Charles Sampson (NRL Monterey), et.al.
- Observing Hurricane Boundary Layer Phenomena using Mobile Research Radars Dr. John Schroeder (TTU)

- Ocean Current and Shear Measurements in Hurricanes Isidore and Lili:
Implications for Intensity and Structure Change
Dr. Lynn Shay (RSMAS/UM) and Mr. Eric Uhlhorn (UM-CIMSS)
- Tropical Cyclone Hazard Graphics Mr. Scott Spratt (WFO Melbourne), et.al.
- A Tethered Balloon System for Continuous Monitoring of Hurricane Eye
Properties Mr. Joseph Williams (ModelSym, Inc.) and Dr. Kerry Emanuel (MIT)
- Toward an Objective Satellite-Based Algorithm to provide Real-Time Estimates
of TC Intensity using Integrated Multispectral (IR And MW) Observations
Mr. Chris Velden (UW-CIMSS), et.al.
- Hurricane Wave Field Measurements to Improve Air-Sea Parameterization
Dr. Edward Walsh (NASA/GSFC), et.al.
- Visualizing Tropical Cyclone Microwave Imagery through an Online Morphing
Application Mr. Anthony Wimmers and Mr. Chris Velden (UW-CIMSS)
- An Updated Decision Tree to Assess Forecast Track Confidence for Landfalling
Gulf of Mexico Tropical Cyclones
Mr. Lance Wood (NWSO Houston/Galveston), et.al.
- Storm Surge QUICKLOOK and ALERT at National Ocean Service (NOS) Water
Level Stations Nationwide
Mr. Darren Wright and Mr. William Popovich (NOAA/NOS)

Wednesday, March 9, 2005

7:00 AM Continental Breakfast

7:50 AM Opening/administrative remarks Mr. Floyd Hauth (OFCM/STC)
Session Coordinator

Session 4: A Tale of Four Hurricanes: Lessons Learned from Charley, Frances, Ivan and Jeanne

Session Leader: Dr. Steve Lyons (TWC)

Rapporteur: Mr. Tony Ramirez (OFCM/STC)

8:00 AM Eye-to-Eye with a Monster: Hurricane Charley
Mr. Wayne Sallade (Charlotte County, FL, Emergency Management)

8:15 AM Psychological Impacts of Natural Disasters Dr. Pamela Deroian (Univ. of Miami)

8:30 AM WFO Melbourne Hurricane Operations: An Operational Paradigm and Lessons
Learned from the 2004 Hurricane Season
Mr. David Sharp and Mr. Bartlett Hagemeyer (WFO Melbourne)

8:45 AM Hydrological Impact of the 2004 Hurricane Season
Mr. Todd Hamill (NWS Southeast RFC)

9:00 AM Hurricane Wind Analyses in Support of the NOPP and DHS-FEMA
Dr. Mark Powell (HRD)

9:15 AM Coastal-Change Lessons from Charley, Frances, Ivan, and Jeanne

Dr. Abby Sallenger (USGS), et.al.

9:30 AM Morning Break (9:30-10:00)

Session 5: Impacts, Products, and Services

Session Leaders: Mr. Steve Letro (WFO Jacksonville)/CDR Mark Gunzelman (Navy/N7C)

Rapporteur: Mr. Doc Carver (FAA/OFCM)

10:00 AM Communicating Serious Weather Messages Dr. Betty Morrow (Consultant)
10:15 AM Let's Simplify!—Improving the Efficiency of NWS Forecast Office Tropical Cyclone Products Mr. Barry Goldsmith (WFO Tampa Bay)
10:30 AM The State of Tropical Cyclone Tornado Prediction Mr. Roger Edwards (NOAA/SPC)
10:45 AM Review of the 2004 Hurricane Season Using the NOPP Real-Time Forecasting System for Tropical Cyclones Dr. Hans Graber (Univ. of Miami), et.al.
11:00 AM Development of a Multi-Platform Satellite Tropical Cyclone Wind Analysis System Dr. John Knaff (CSU/CIRA), et.al.
11:15 AM Verification of NOAA's Seasonal Atlantic Basin Hurricane Forecasts Dr. Gerry Bell (CPC), Mr. Eric Blake (TPC/NHC-presenter), et.al.

11:30 PM Lunch (on your own) (11:30-1:00)

Session Coordinator: Lt Col Rob Rizza (Air Force/OFCM)

Session 6: Joint Hurricane Test bed—Results and Prospects for the Future

Session Leaders: Dr. Richard Knabb (TPC/NHC)/Dr. Chris Landsea (HRD)

Rapporteurs: Dr. Paul Try (OFCM/STC)/Mr. Floyd Hauth (OFCM/STC)

1:00 PM Joint Hurricane Testbed (JHT): 2005 Update Dr. Jiann-Gwo Jiing (TPC/NHC), et.al.
1:15 PM Real-Time Dissemination of Airborne Doppler Radar Data from the NOAA P-3 Aircraft: A Progress Report Dr. John Gamache (HRD)
1:30 PM Testing the Ensemble Transform Kalman Filter Strategy for Targeted Observations during the 2004 Hurricane Season Dr. Sharanya Majumdar (Univ. of Miami), et.al.
1:45 PM Consensus and Predicted Consensus Error Validation for 2004 Dr. James Goerss (NRL Monterey)
2:00 PM Objective and Automated Assessment of Operational Global Forecast Model Predictions of Tropical Cyclone Formation and Life Cycle Dr. Patrick Harr (NPS)
2:15 PM Improvements in Deterministic and Probabilistic Tropical Cyclone Surface Wind Predictions: A Joint Hurricane Testbed Project Update Dr. Mark DeMaria (NESDIS), et.al.
2:30 PM Afternoon coffee/soda break (2:30-3:00)
3:00 PM Experimental Tropical Cyclone Surface Wind Speed Probabilities and Potential Products Dr. Richard Knabb (TPC/NHC)

- 3:15 PM The CIMSS Advanced Objective Dvorak Technique (AODT)—Latest Advancements and Implementation Status Mr. Timothy Olander (UW-CIMSS), et.al.
- 3:30 PM Improving the Validation and Prediction of Tropical Cyclone Rainfall Mr. Robert Rogers (HRD), et.al.
- 3:45 PM Development of a Rapid Intensification Index for the Eastern Pacific Basin Mr. John Kaplan (HRD) and Dr. Mark DeMaria (NESDIS)
- 4:00 PM Developing an Inner-Core SST Cooling Predictor for Use in SHIPS Dr. Joseph Cione (HRD), et.al.
- 4:15 PM Evaluation of Upper Ocean Mixing Parameterizations Dr. S. Daniel Jacob (UMBC), et.al.
- 5:00 PM **OFCM Staff Meeting (5:00-5:30)**

Conference Banquet

- 7:00 PM **Banquet** (Cash Bar at 6:30)
- 7:45 PM **Banquet Address:** Mr. W. Craig Fugate, Director of the Florida Division of Emergency Management

Presentation of the Richard Hagemeyer Award

Thursday, March 10, 2005

7:15 AM Continental Breakfast

7:50 AM Opening/Administrative Remarks

Mr. Robert J. Dumont (OFCM)
Session Coordinator

8:00 AM **Strategic Planning Workshop: Preparing the Future Roadmap for Tropical Cyclone Research**

- Panel 1 (8:00-9:30 a.m.): *The Customer Perspective*

Overview talks plus questions and discussion

Moderator: Ms. Robbie Hood (NASA)

Rapporteurs: Mr. Floyd Hauth (OFCM/STC)

Lt Col Rob Rizza (Air Force/OFCM)

Panelists:

- Dr. Frank Marks (NOAA/HRD)—Overview
- Dr. Richard Knabb (TPC/NHC)—Meteorological perspective
- Mr. John Gambel (DHS/FEMA)—Emergency management perspective
- Dr. Steve Lyons (TWC)—Media perspective

9:30 AM Morning Coffee Break (9:30-10:00)

- Panel 2 (10:00-11:30 a.m.): *The Research Community Perspective*

Overview talks plus questions and discussion

Moderator: Dr. Frank Marks (HRD)

Rapporteurs: Dr. Paul Try (OFCM/STC)/Ms. Mary Cairns (OFCM)

Panelists:

- Dr. Naomi Surgi (NOAA/NCEP)—Developing an Operational Modeling System for Hurricanes
- Mr. Robert Rogers (NOAA/HRD)—Developing an Observational Capability to Initialize and Evaluate the Modeling System
- Dr. Jeff Lazo (NCAR)—Socioeconomic Research Agenda.
- Ms. Robbie Hood (NASA)—Developing a Framework for Research to Operations Transition

11:30 AM Lunch (on your own)

1:00 PM Working Group for Hurricane and Winter Storm Operations and Research Meeting
Dr. Edward Rappaport (TPC/NHC), Chairperson

Friday, March 11, 2005

7:30 AM Continental Breakfast

Final Plenary Session

8:30 AM Opening/Administrative Remarks Ms. Mary Cairns (OFCM)
Session Coordinator

8:35 AM WG/HWSOR -- Review of Action Items and NHOP Changes
Dr. Edward Rappaport (Chairperson, WG/HWSOR)

9:00 AM Strategic Planning Workshop Wrap-up
Ms. Robbie Hood (NASA) and Dr. Frank Marks (HRD)

9:30 AM Final Wrap-up Mr. Samuel P. Williamson, Federal Coordinator

10:00 AM Adjourn